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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,422	10/24/2001	Leon L. Nieczyporowicz	907B.0005.U1(US)	7176

29683 7590 10/31/2005

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EXAMINER	
TRAN, KHANH C	

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 10/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/037,422	NIECZYPOROWICZ ET AL.	
	Examiner	Art Unit	
	Khanh Tran	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-6,9,10,13-16 and 19-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-6,9,10,13-16 and 19-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The Amendment filed on 08/05/2005 has been entered. Claims 3-6, 9-10, 13-16 and 19-26 are pending in this Office action.

Response to Arguments

2. Applicant's arguments, see pages 8-11 of the Amendment, filed on 08/05/2005, with respect to the rejection(s) of claim(s) 3-6, 9-10, 13-16 and 19-26 under 35 U.S.C 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Vimpari U.S. Patent 6,577,671 B1, Hasegawa U.S. Patent 6,577,671 B1, Ovesjö et al. U.S. Patent 6,108,369 and Schulz U.S. Patent 6,648,967.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 3-6, 9-10, 13-16, 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vimpari U.S. Patent 6,577,671 B1 in view of Hasegawa U.S. Patent

6,577,671 B1, Nakajima et al. U.S. Patent 5,487,083 and Ögren et al. U.S. Patent 6,795,689 B1.

Regarding claim 3, in column 5, lines 15-40, figure 6 illustrates a block diagram of a CDMA cellular telecommunications system 10 including a plurality of mobile stations (MSs) 12 are located within cells (Cell_1, ..., Cell_n), each of which is associated with a base transceiver station (BTS). In column 1, lines 30-50, Vimpari teaches a method for assigning spreading codes to mobile stations located within a cell. Vimpari does not discloses the set of spreading codes comprises an all one's spreading code. Figure 4 of prior art shows a conventional technique for allocating spreading codes including an all one's spreading code, code 1. Because code 1 is one of possible spreading codes, it would have been obvious for one of ordinary skill in the art that code 1 can be included in the set of spreading codes taught in Vimpari invention.

Vimpari does not teach the claimed limitations "periodically hopping amongst individual ones of the spreading codes of the set of spreading codes as set forth in the claim".

In column 3, lines 35-60, see also figure 3C, Hasegawa teaches a spread spectrum code hopping method in which a number (K) of hopping codes is equal to 4 (K=4), and a number (N) of times of hopping required to transmit one data item is equal to 3 (N=3). That is, one data item is transmitted in three times of hopping using four spreading codes. These four codes are hopped in accordance with a predetermined hopping pattern, and information is transmitted using the

SIK in the same manner as that in the DS method. Because Hasegawa further teaches that one hopping frequency may be affected by an interference of a single spreading code, but other hopping frequencies are not affected by the interference. Thus, the high speed FH method has a superior tolerance to the spreading code interference, therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention that Vimpari teachings can be modified to implement the high speed frequency hopping as taught by Hasegawa.

Vimpari and Hasegawa do not teach the step of "assigning a non-hopped sub-set of the larger set of spreading codes to individual ones of the plurality of subscriber stations for use on a system access channel".

In column 6, lines 60-67, Nakajima et al. teaches that the common radio frequency f1 is assigned spectrum spreading codes for control channels of the respective radio zones. In column 1, lines 35-50, Ögren et al. further discusses that wideband CDMA systems contain one or several radio frequency carriers. Each radio frequency carrier contains a number of spreading codes, which may be allocated to provide different data rates to satisfy different mobile user requirements. Some of those spreading codes are used for traffic channels and some are used for *common control channels such as random access channels*, paging channels, broadcast channels, etc. In view of that, the control channels include access channels.

As common knowledge of an average skill in the art, fixed frequency corresponds to non-hopped frequency. And because power requirement is less on fixed frequency than hopping frequencies, it would have been obvious for one of ordinary skill in the art at the time of the invention that Vimpari teachings can be modified to assign fixed frequency to some of the spreading codes for use on system access channel and system control channel.

Regarding claim 4, claim 4 is rejected on the same ground as for claim 3 because of similar scope.

Regarding claim 5, claim 5 is rejected on the same ground as for claim 3 because of similar scope. Furthermore, common control channels are non-traffic channel.

Regarding claim 6, claim 6 is rejected on the same ground as for claim 3 because of similar scope. Furthermore, in column 1, lines 35-50, Ögren et al. discusses that wideband CDMA systems contain one or several radio frequency carriers. Each radio frequency carrier contains a number of spreading codes, which may be allocated to provide different data rates to satisfy different mobile user requirements. Because spreading codes can provide different data rates (symbol rates), it would have been obvious for one of ordinary skill in the art at the time of the invention that Vimpari

and Hasegawa teachings can be modified to include spreading codes with different data rates as discussed in Ögren et al. invention.

Regarding claim 9, claim 9 is rejected on the same ground as for claim 6 because of similar scope. Furthermore, because spreading codes can provide different data rates, for any particular mobile station, one of ordinary skill in the art would have recognized that spreading codes can be selected at one symbol rate.

Regarding claim 10, claim 10 is rejected on the same ground as for claim 9 because of similar scope.

Regarding claim 13, claim 13 is rejected on the same ground as for claim 3 because of similar scope.

Regarding claim 14, claim 14 is rejected on the same ground as for claim 4 because of similar scope.

Regarding claim 15, claim 15 is rejected on the same ground as for claim 5 because of similar scope.

Regarding claim 16, claim 16 is rejected on the same ground as for claim 6 because of similar scope.

Regarding claim 19, claim 19 is rejected on the same ground as for claim 9 because of similar scope.

Regarding claim 20, claim 20 is rejected on the same ground as for claim 10 because of similar scope.

Regarding claim 21, claim 21 is rejected on the same ground as for claim 3 because of similar scope.

Regarding claim 22, as recited in claim 1, Vimpari teaches a method for assigning spreading codes to mobile stations located within a cell. Vimpari does not discloses the set of spreading codes comprises an all one's spreading code. Figure 4 of prior art shows a conventional technique for allocating spreading codes including an all one's spreading code, code 1. Because code 1 is one of possible spreading codes, it would have been obvious for one of ordinary skill in the art that code 1 can be included in the set of spreading codes taught in Vimpari invention.

Regarding claim 23, as recited in claim 6, in column 1, lines 35-50, Ögren et al. discusses that wideband CDMA systems contain one or several radio frequency carriers. Each radio frequency carrier contains a number of spreading codes, which may be allocated to provide different data rates to satisfy different mobile user requirements.

Regarding claim 24, referring back to Hasegawa invention, also recited in claim 3, in column 3, lines 35-60, see also figure 3C, Hasegawa teaches a spread spectrum code hopping method in which a number (K) of hopping codes is equal to 4 (K=4), and a number (N) of times of hopping required to transmit one data item is equal to 3 (N=3). That is, one data item is transmitted in three times of hopping using four spreading codes. These four codes are hopped in accordance with a predetermined hopping pattern, and information is transmitted using the SIK in the same manner as that in the DS method. In figure 1, PN code generating means for generating a plurality of pseudo noise codes which differ from each other; and selecting means for selecting the pseudo noise codes generated by the PN code generating means in accordance with a predetermined hopping pattern, the pseudo noise codes selected by the selecting means being used as the spreading signal; see column 2, lines 5-20. In view of that, the hop between spreading codes are at a symbol boundary of all of the subscriber stations.

4. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vimpari U.S. Patent 6,577,671 B1, Hasegawa U.S. Patent 6,577,671 B1, Nakajima et al. U.S. Patent 5,487,083 and Ögren et al. U.S. Patent 6,795,689 B1 in view of Magnusson et al. U.S. Patent 6,163,524.

Regarding claims 25 and 26, Vimpari does not teach spreading codes comprising orthogonal, Walsh-Hadamard constructions having a variable spreading factor. Magnusson et al. teaches in another US Patent that varying spreading factor is a known technique for accommodating variable data rates in CDMA communication systems;

see column 4, lines 33-48. Magnusson et al. further teaches that the information of different users is made distinguishable, in accordance with CDMA principles, by using distinguishable spreading sequences, such as mutually orthogonal Walsh-Hadamard sequences; see column 3, lines 45-60. Magnusson et al. teachings are also in the same field of endeavor with Vimpari and Toskala et al. teachings. Magnusson et al. teaches utilization orthogonal Walsh-Hadamard sequences on different users, and varying spreading factor for accommodating variable data rates in CDMA communication systems. In view of that, it would have been obvious for one of ordinary skill in the art at the time the invention was made that Vimpari and Toskala et al. teachings can be modified to implement orthogonal Walsh-Hadamard sequences with variable spreading factor as taught in Magnusson et al. invention. The motivation is that one of advantages of Walsh-Hadamard sequences for channelization is that user information in a received signal can be efficiently recovered by decorrelation using Fast Walsh Transform.

Regarding claim 26, claim 26 is rejected on the same ground as for claim 25 because of similar scope.

Conclusion

5.The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ovesjö U.S. Patent 6,108,369 discloses "Channelization Code Allocation For Radio Communication Systems".

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KCT

Khanh cong Tran 10/27/2005

Examiner KHANH TRAN